

AVIATION

The Oldest American Aeronautical Magazine

JANUARY 9, 1928

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Aerial view of the new city hall at Los Angeles, Calif.

(Warren, School of Aeronautics)

VOLUME
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NUMBER
2

Special Features

Better Navigation
The Westland Widgeon III
Accounting in Aircraft Operations

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The Oldest American Aeronautical Magazine

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The Spirit of St. Louis

All the splendid trans-
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year have been made with the
Wright "Whirlwind" Engine

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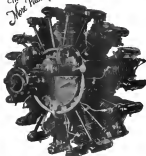
The Oldest American Aeronautical Magazine

Vol. XXIV

JANUARY 9, 1928

No. 2

*That's why
More Pilots fly them!*



Safety Belts

WHEN THIS last three weeks the newspapers have carried accounts of two accidents in which three people lost their lives by being thrown out of planes when they struck bad bumps. In one case passenger and pilot fell out and the plane continued, landing itself with minor damages some distance away. In the other case the pilot stayed by the machine but one passenger was thrown completely out while another managed to cling to a strut. Such accidents are to our mind entirely inexcusable and the result of gross negligence and carelessness.

Every open cockpit plane should be equipped with safety belts that can be easily and quickly adjusted and held fast by the proposed deputies of the Department of Commerce should see that they are used. Striking bumps which would dislodge passengers from their seats is not as rare as might be supposed. In both the first and the third Ford Tour, planes struck bumps which might easily have thrown passengers out. Even on a smooth day it is perfectly possible for the pilot or he becomes careless or makes an error to use the controls in such a violent way that he may throw the passenger out.

As a supplementary thought, when the air becomes rough or passengers become frightened it is instinctive for them to want to grab hold of something to steady themselves by. Though this is a minor detail it is really worth while incorporating in the design, for it adds to the sense of comfort, and, in case of carelessness in the use of the safety belt, it might prevent a serious accident.

The Item of Service

ALTHOUGH WHAT may be regarded as the turning point in American aeronautics has been reached, and aircraft manufacturers are working their plants overtime to be ready for spring deliveries as the result of 1927's wonderful year, they should not lose sight of the fact that 1928 sales will be dependent to a large extent upon 1928 owner satisfaction.

Similar to the automobile owner the airplane owner will have his opinion of his purchase not only upon its looks and its performance, but also upon whether he can have it serviced from time to time without any particular inconvenience. The servicing facilities of aircraftmen have proven a valuable sales argument and each will undoubtedly be the same in the case of the airplane. The airplane manufacturers who, through his distributors, or independently, establishes a system of service stations throughout the country will stand a far greater chance

of selling his customers a second plane, than the manufacturer who overlooks this all important item and allows his customers to make their own repairs, or have them made by a gyp repair shop.

A satisfied customer will boost his purchase to prospective customers. And one way to satisfy customers is, not to forget them when the dotted line has been signed and the plane delivered, but to enable them to get the very best out of their purchase as long as they own it. And that can be made possible by a well located system of authorized airplane and engine service stations.

The New Modock

WHO DOES not remember the origin of the Modock? In 1925 he was fitting across the pages of *Aviation* giving amusement to many and causing irritation to others. He was characterized as "one who attaches himself to any popular movement for purposes of self-advertisement or social prestige." Dared from the Latin "Mao"—nothing; and the Greek "Doko"—divided by two. He was traced to his early beginnings in Africa where he lived on the docks but then renouncing civilization owing to the attacks by the karts. But how times have changed!

The Modock of 1928 will play an ever increasing part in American aeronautics. Instead of emitting empty vapors his money will do the talking. While the old Modock basined in scholastic activity, the New Modock has only one key to open the door of aerial prominence—investment. The old aeronauts which was considered a "wren or buzzard" on aerial life has now turned towards the solid field of finance.

The old Modock has been driven out by a superior and a harder man. Those new Modocks know the value of air transportation, they know what an airplane would mean to their city, they believe that an airplane factory is an asset. And what is more they are putting their money into these enterprises.

As it now appears, the early Modock stage may have been, after all, only the educational period of many men whose enthusiasm at the time seemed to be solely idle interest. Subsequently with the changed conditions the gradual subordination of that little group of experimenters of the air when for so long held the keys to the mysteries of flying. Good pilots are as invaluable as ever but now are taking their places in organizations. Good business management and sound financing have become as important as knowledge of flight. The old Modock may become in the future the big business man of aviation.

THE noteworthy records of Wright Aeronautical Engines are only outward evidence of inward quality.

Behind these engines stands the entire Wright Organization, ever watchful and constantly active

in seeing the product give satisfactory service.

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WRIGHT



Action view of a Westland Widgeon III banking into a turn.

The Westland Widgeon III

An English Two Place Parasol Monoplane Powered With Either an A.D.C. "Cirrus II" or Armstrong Siddeley "Genet II" Engine

DURING THE past year the monoplane has become very popular in this country. For commercial work monoplane have increased in number in America while in Great Britain there are comparatively very few monoplanes. It has been estimated that of all the British airplane built during the last 16 years more than 95 per cent. have been biplanes. For the past few years the Westland Aircraft Works at Yeovil, England, has been manufacturing the Westland "Widgeon", a parasol monoplane for the private owner, commercial traveler, touring work or the airplane club work. The manufacturer is a firm believer of the monoplane for this type of service and has successfully built and manufactured this plane for service in England and in Colombia.

Has a High Speed of 190 M.P.H.

The Westland Widgeon III is a two place parasol monoplane powered with either the A.D.C. Cirrus II engine or the Armstrong Siddeley Genet II engine, developing 72 hp. and 75 hp. respectively. The structure is of wood with the wing mounted above the fuselage and supported by vertical struts. The plane is of conventional construction and can be fitted with dual control if desired. The Widgeon has been granted the British Air Ministry certificate of airworthiness for a total weight of 1,400 lb., allowing for passenger, pilot and baggage. With this load it has a high speed of 190 m.p.h. with a landing speed of 42 m.p.h. It has an actual rate of climb of 500 f.p.m. with a service ceiling of 14,500 ft.

The wing, which is of wood, is supported by struts from each spar and meet in a V at the lower spar. The rear strut has an adjustable fulcrum to enable the wings to be properly traced when the plane is first assembled and it is impossible to vary the incidence of the wing afterward.

These struts are arranged so that the wings can be folded by one man in less than a minute. When folded the overall span of the plane is 13 ft. 9 in. and the wings are not enough so that no jerry struts are needed unless the plane is to be used for great distances over rough ground. The folding of the wings is very simple, all that is necessary is the release of two pins, one on each side, making the two halves of the wing free to swing back along the fuselage. The aileron cables are arranged so that as the wings fold back the rear aileron goes slack, allowing the ailerons to hang free.



Close up view of the cockpit and the baggage compartment in the Westland Widgeon III.

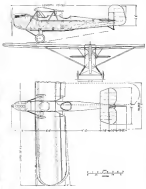
along the width of the plane. The wings hinge on the point of attachment of the rear spar to the engine section and fold taking for housing.

The wing construction is conventional with wood box spars, spruce ribs and fabric covering. The center section contains the engine lock which feeds by gravity to the engine. This lock has a capacity of about 25 gal. giving the plane a range of about 200 mi. The R.A.F. 24 wing section is used.

Admirer as of Metal Construction

An auxiliary spar supports each aileron which runs the entire length of the wing and as it is of narrow chord, it has a high speed rate. Attached to a control horn at the inner end of the aileron is a short cable running through the side of the fuselage. Unlike the wings, the ailerons are of metal construction as are the tail surfaces also. The leading edge of the aileron is a dovetail tube while the ribs are of sheet aluminum.

The fuselage is of wood with no wire bracing. Wood members make up the internal structure with sheet ply covering for additional strength. The sides and bottom are flat while the top has the usual curve back and the entire fuselage is covered with fabric protecting it from moisture. The controls are arranged so that they are easy of access and use, in addition, very roomy and comfortable. The passenger's cockpit has a door at the right side with a small step and rail leading attached to the lower leggers. Both seats are upholstered with air cushions and the seats are adaptable to take a seat type parachute. Between the two cockpits is the desk fitting in a luggage compartment with a door on top.



Three view drawing of the Westland Widgeon III.

It is large enough to accommodate two engines, while in front of the passenger's cockpit is another smaller compartment. The seats are arranged so that both pilot and passenger have very good vision. The blind area above the pilot is very small as the pilot sees the wing almost head on. The pilot's instrument board is laid out on an oval panel which carries an air speed indicator, altimeter, tachometer, tachometer and oil pressure gauge. Conventional stick and rudder bar control is used with an optional cable running inside the cockpit.

The engine mount is attached to the fuselage by four bolts. The mount itself, which is built of welded steel tubing, is manufactured in two standard types; one to take the Cirrus II and the other to take the Genet II. As there is some difference in the weight of the two engines the center of gravity is displaced by the substitution of one engine for the other. To counteract this, two standard center sections are used, one giving the wings a slightly greater sweep back than the other.

Each Plane Has Set of Tools

The strength type of axle is used on the landing gear with the load taken by the rear "legs" which contain the shock absorbers. Steel springs with special dampers are used to take the shock. Each plane is supplied with set of tools. All parts and fittings are stamped with numbers to simplify replacement.

The manufacturer's specifications are as follows:

Span	36 ft. 4 1/2 in.
Length overall	23 ft. 5 1/2 in.
Wing, span folded	13 ft. 9 in.
Height, overall	8 ft.
Climb	500 ft. per min.
Altitude	R.A.F. 24
Wing area	296 sq. ft.
Wing loading	5.8 lb. per sq. ft.
A-curve area	26.6 sq. ft.
Aileron area	11.5 sq. ft.
Center area	10.25 sq. ft.
Fin area	2.5 sq. ft.
Rudder area	10.5 sq. ft.

Weights

	Cirrus II	Genet II
Wing with bracing and center section	282 lb.	242 lb.
Tail	30 lb.	38 lb.
Fuselage and engine mounting	298 lb.	248 lb.
Power plant exclusive of tanks	221 lb.	248 lb.
Fuel, 115 lb. fuel and 10 lb. oil	217 lb.	121 lb.
Pilot, passenger and baggage	420 lb.	420 lb.

Total weight loaded	1430 lb.	1323 lb.
Design load	1400 lb.	1400 lb.
Wing loading	7 lb. per sq. ft.	8.8 lb. per sq. ft.
Power loading	18.4 lb. per hp.	17.5 lb. per hp.

Performance

High speed	190 m.p.h.
Cruising speed	85 m.p.h.
Landing speed	42 m.p.h.
Climb at ground	500 ft. per min.
Service ceiling	14,500 ft.
Climb to 5,000 ft.	13 min.
Climb to 10,000 ft.	22 min. 40 sec.
Approximate take-off run	100 yd.
Approximate landing run	80 yd.



The U.S.S. SARATOGA at anchor at the U. S. Navy Yard at Philadelphia, Pa.

The Lexington and Saratoga

New Airplane Carriers are 888 Ft. Long and 106 Ft. Wide and are Rated as Being the Highest Powered Vessels in the World

ON DEC. 14 the aircraft carrier "Lexington" was placed in commission at the First River yards of the Bethlehem Shipbuilding Corp., Quincy, Mass. It is the sister-ship of the aircraft carrier "Saratoga" that was commissioned on November 16 by the American Navy-Brown Electric Corp. (Formerly the New York Shipbuilding Co.) at Camden, N. J. Each of these ships, which are electrically driven, is 888 ft. long, and 106 ft. wide. It is understood that each will carry close to 100 airplanes. They are said to be the longest and highest powered vessels in the world, developing 150,000 hp. each.

Plenty of Room for Take Off

For some time the Navy has been assembling the equipment for the two aircraft carriers. The flying equipment will include plane beds by the Landing Aeronautical Engineering Corp., Boston; Airplane Co. Carbine Airplane and Motor Co., Glens Falls, N.Y. and Chance Vought Corp. It is understood that in the Lexington will be assigned two squadrons of 18 planes each of the Curtiss Fighter type, two squadrons of 18 planes each Martin torpedo planes, half a squadron of six Landing amphibians for observation purpose and a utility squadron of three Vought Corsairs. The Saratoga will carry two fighting squadrons of Boeing fighters of 18 single seaters each, two squadrons of 18 Martin torpedo planes, one observation squadron of 12 Landing amphibians and utility squadrons of Vought Corsairs. It is said there is room on the deck for all of the planes and still have ample space to take off and land.

After being commissioned the Saratoga and the Lexington go to the Philadelphia and Brooklyn Navy Yards respectively to take on stores and equipment before making a shakedown

cruise and later join the Battle Fleet with the aircraft against now. The ships each have a displacement of 35,000 tons with a maximum draft of about 36 ft.

The electric propulsion apparatus, designed by the General Electric Co., develops 150,000 hp., which is greater than the combined output of the six electric driven capital ships set in commission, the Ford, New Mexico, California, Tennessee, Maryland, Colorado and West Virginia. The machinery comprises four 35,200 kilowatt turbine generator sets which supply current to eight motors. The generators are operated by steam from 16 oil feed boilers. The eight motors are connected in pairs to each of the four propeller shafts. Each motor has a capacity of 22,500 hp. and measures 8 ft. in diameter. A total of 45,000 hp. is delivered to each shaft which drive the propeller blades at 317 r.p.m.

Other subsidiary power demands are supplied by six 750 kilowatt direct current turbine generator sets. The ship-



The U.S.S. LEXINGTON at the Bethlehem Shipbuilding Corp. at Quincy, Mass.

ment operates the steering gear, anchor windlass, ventilation fans, lighting system, radio, and telephone and telegraph. The elevator, searchlight, fire alarm system, cooking apparatus and refrigeration are also electrically operated.

A long flying deck extends over the entire top of the ship from stem to stern and is free from all obstructions with the exception of an "island" on the starboard side where is a massive reinforced funnel enclosure, the masts, water-tube tanks and superstructures are located.

To make up for the preponderance of weight on the starboard side, quantities of oil, gasoline and water are carried on the port side of the vessel. When gasoline and oil are consumed on large quantities, water ballast can be introduced in their place.

The flying deck will accommodate at one time a large part of the ship's complement of sixty airplanes and still leave sufficient room for a take-off. Near the bow is a device for launching airplanes.

Flying Surface About 900 Ft. Long

The story is so constructed as to come flush with the flying deck making an unbroken flying surface about 900 ft. long. The elevators are capable of hoisting the largest type naval plane. An arresting gear is set on the flying deck to stop landing airplanes within a short distance.

The interior is quite different from the space below decks in other naval vessels. There are viewing places for airplanes as well as cranes and elevators with which to hoist them up from below.

The crew's quarters are on the deck beneath the flying deck and the hangar deck is below that, thus removing the presence of the upper decks from observation that might drop on the ship by enemy airplanes. Forward of the hangar deck there are eight decks from the hold to the flying deck.

There are fully equipped aircraft machine shops and carpenter shops on board, a laboratory for testing engines, and shops for fabric work, drying and painting. There is a deck



The U.S.S. LEXINGTON on its way from the ship yards of Bethlehem Shipbuilding Corp. to the U. S. Navy Yard at Philadelphia, Pa.

shops, a planing shop and sawing shop with more than 4000 ft. of machine. The interior is divided in 900 separate compartments, each of which is supplied with a loud speaker system from one of several central stations, about the ship, to effect an easy way to immediately reach.

The ship's armament is addressed to the airplanes which she carries, consists of eight 5.9 inch high range rifles and eight 5.9 inch anti aircraft guns capable of shooting

off destroyers as well as enemy aircraft attacks. These latter guns are located in groups of three at strategic points along the ship which facilities concentrated and accurately directed fire as well as rapid supply of ammunition.

The Barbettes and Lexington are said to carry the best equipped aerological laboratories afloat. Each ship has two complete sets of wind direction and velocity, temperature, and humidity measuring equipment, one installed on



Putting some finishing touches on the U.S.S. LEXINGTON at the Bethlehem Shipbuilding Yards at Quincy, Mass.

the port side and the other on the starboard side. This is a feature which has been found necessary for aerological laboratories aboard ships because it is not possible to select the ideal exposures available to weather observations ashore. Aboard ship interference of the superstructure or the masts from the decks, given from the lathes, etc., may prevent accurate measurements of air conditions with any set of instruments. However, with a theodolite set on each side of the ship, accurate measurements can be obtained by the interference of the weather map data on the preparation of aerological advice for aircraft leaving the ships for extended flights. The weather broadcast which goes on duty from Lexington will form the basis for the general weather maps which will be prepared aboard the carriers. These facilities will provide an aerological service previously denied to that available at any of the larger airports.

Propose Baker-San Francisco Passenger Transport Service

BAKERIES WILL soon be able to leave their town of Baker, Ore., at 7 A.M. by Bell Air Line Co. plane, arrive in Portland in four hours, transfer to a California-based Bell Air Line plane and be in San Francisco at 6 P.M. the same day.

This is the schedule that George B. Glens, of the Bell Air Line Co., proposed to Baker citizens on his recent visit to determine the feasibility of a direct passenger air line from Baker to Portland.

"All that is needed to make such a service possible," said Mr. Glens, "is to sell 25 round trip tickets each week and the rest of those tickets will just about equal weekly fare plus fuel and other costs."

Better Navigation

Some Additional Requirements for Safe Aerial Navigation and Their Usefulness to the Long Distance Flier

By LIEUT. COMDR. H. V. WILEY, U.S.N.

CLOSE OBSERVATION of newspaper reports concerning the trans-oceanic flights of the past season has focused the impression that the art of navigation is a somewhat neglected. Of course there are many qualifications other than ability to navigate, that are necessary for a successful long distance flight. The pilot must possess suitable physical and mental qualifications, must be conversant in night and low visibility flying, and flying by compass, dead reckoning, and celestial navigation, and all the other items which go to make a good pilot. While acknowledging himself to qualify in all the other important items it seems that the average pilot has overlooked navigation to a large extent, for it is common knowledge that the average aviator flies from point to point, only so far as he can see, using his compass and chart only in a general way. Some specialists have made long distance flights by compass only, showing that it can be done, but the average pilot, flying almost always during daylight, or at night, over a well known route, depends almost entirely on observation of terrestrial landmarks as he advances.

Such procedure, no matter how experienced the pilot may be, is not sufficient for serious flying. The pilot must depend upon his compass and charts, must be able to ascertain and apply the corrections to his compass course to make good the course desired, and must ascertain his ground speed if he is able to perform his position at any time.

De Pile's Reduced Importance of Navigation

In addition it may be necessary to resort to observations of heavenly bodies and use of radio compass stations and barometers. Pilots that are able to do these things are almost infallibly successful. One has only to point to the wonderful flight of de Pile, whom it seems, reduced the importance of navigation more than any other man in long distance flying, and to the trans-Atlantic and other long distance flights of airdocks. During the flights of airdocks, the newspaper accounts seldom mention the possibilities of instrument navigation, apparently taking it for granted that a trained navigator is on hand, equipped with sufficient instruments to keep a running track of his position.

What then are the requirements for safe navigation that have apparently been overlooked? Tabulating briefly they seem to be:

1. Charts, use of, landings and zoom fix.
2. Radio compass bearings, use of.
3. Radio barometers, use of.
4. Radio meteorological reports—use of. Plotting of storm areas.
5. Compass—ability to apply corrections and clear fix.
6. Dead reckoning and utilizing of drift—use of. Drift.
7. Ground speed instruments.
8. Celestial observations.

Let us discuss the above items in a little more detail. First, taking up charts, let us state that suitable charts for long distance aviation use have not been published, and probably it will be necessary for the pilot to construct some special charts. Therefore we must ask that the pilot know how to draw them up and use them. Does he know the difference between a chart as constructed and the use of each? Can he lay down a great circle on a Mercator chart? Can he measure distances on the various types? Has he noted the magnetic variation? etc. Has he sufficient charts for the possible areas in which he may fly? Have his charts satisfactory in the discussion of important light houses so that he may identify a navigational light if he sights it? There are hundreds of items that an experienced aviator can point out as important.

Must Have Radio Compass Station Locations

In addition, he must have the radio compass station locations, and be able to lay down a radio bearing on that chart, corrected for earth's curvature. This also applies to the three radio beacons, which furnish simply a radio line of bearing.

In regard to meteorological reports, most pilots, the one who navigates must be able to plot such reports as he receives to arrive, and plot the location of high and low barometric areas so that he may locate areas of low weather and low visibility as well as other factors which indicate the possibility of favorable winds and avoid unfavorable ones. He should also be able to obtain the barometric pressure at his own location by flying close to the water, translating his observations into barometric pressure and comparing it with the barometer at the time and place of his take off. This is not recommended as an accurate determination of the local barometer but is only one of the little items that pilots should be able to do. The writer once visited a commercial airport in the United States where the barometer is the operations office read 29.92 inches, which is noteworthy, and generally denotes a storm center, and no inquiry was made that this instrument meant nothing at all to those in charge of operations. It might be added that the correct barometric reading was 29.87, which is near as average.

In regard to storm fix, compasses, we have one of the most important considerations. It is fully realized here that it is to be done as airplane by magnetic compass. It is fully realized that it is more or less difficult to obtain the correct deviations accurately on different headings. The most efficient compass has increased the accuracy of steering only by a few degrees, it may state that a great deal of added compass facilities are the fault of the operator's use of the instrument. It is so common for a poor navigator to blame his compass as it is for a poor golfer to blame his club. Without some study of compass errors and their correction, and practice in flying compass courses, how can the average pilot expect to follow the oceanic land route?

The writer has very little knowledge of the means employed by most airlines firms to determine drift (then may be lost) by the airlines (that can be obtained, a compass drift pilot may wish attention to it). One pilot said he could determine drift within one degree of error. The pilot believes it, or is it that he wasn't familiar with degrees and minutes? How many pilots have practiced ground speed over water so that they can get it when the sea is rough and there is no mark upon the water? How many a pilot with the LePrieux Navigator, the Goss drift instrument (inductor type), the three wire drift instrument similar to the Pioneer Drift and Speed indicator, or other modern instruments? Have any of these reports been given to the Coast Guard? Commander Dyer said there is possibly a reference point the obtaining drift? If so, did the pilot know it was there? The writer talked to one long time pilot of considerable reputation who thought it necessary to drop three there is a new one in order to obtain drift?

Newspaper Reports Exaggerated

Furthermore, ground speed, is extremely concerned with drift, in ground speed and drift instruments are generally assumed. It is thought that most pilots know how to combine two drift angles taken on different courses, to obtain ground speed and hence and direction, etc., but if they cannot obtain the drift accurately, this is impossible. From some newspaper articles the impression is gained that some of the aviators did not know how to compute a desired course after having been given certain assumptions regarding wind force and direction. This is probably an exaggeration, but it is true that a well informed aviator would have with him such diagrams or devices to solve this problem graphically or mechanically.

In regard to celestial observations, item eight, it is admitted that a practical knowledge is better to obtain and considerable practice is necessary in addition to the theoretical knowledge. The recent statistics such as the Naval Data, the Bureau of Standards, the Peace Corps, and the

others, make celestial observations fairly easy to obtain, and accuracy can be depended upon within a few miles. Combining their use with certain tables, etc., the line of position can be obtained in a very short time. However, the knowledge of the use of instruments is not widespread and as for prepared tables, one is forced to conclude that a recent successful pilot had his work previously completed before he started, "the first time it had ever been done". One wonders how the United States Navy for the last fifty years regarded its own position exactly as soon, if the celestial night work was not worked out ahead of time?

In order to make this article brief, no attempt has been made to cover these various items. Perhaps a complete knowledge of all of them is not necessary, but each one has its proper weight and is more or less important and beneficial. It is granted without argument that all these items cannot be obtained in an ordinary plane. If this plan does nothing else it may improve the habits and fears of trans-oceanic pilots that the location of navigation instruments and charts must be maintained in the design of the plane. The navigator must have his instruments located where he can use them efficiently and comfortably, and must have sufficient room for his charts. His ground work accurately be at his command, he must work without light, he must have a desk or board to lay out his chart, and he must be able to manipulate his instruments. Therefore, let us urge before long distance there is pay more attention to navigation, and urge upon the builders the necessity of increasing the location of navigation instruments and accessories in the design.

Milwaukee's Four Week Aviation Campaign Proves Great Success

A FOUR weeks campaign, lasting from Nov. 21 to Dec. 18, and sponsored by the Milwaukee Association of Commerce and the Milwaukee Advertising Club, in an effort to make Milwaukee air-minded, proved successful according to the new statistics, at a meeting held at the Hotel Milwaukee.

"The average postage is an exact proof of 22 1/2 days, day, previous to the campaign, at an average of 30 cents a day at present," Postmaster Peter F. Pansick, stated. "Practically this entire increase in postage was made up by single letters bearing the 10-cent air mail stamp, and showing that Milwaukee residents are now aware of the benefits of air mail."

Carl Herffeldt was appointed chairman of the air service committee of the Milwaukee Association of Commerce and the first step taken by the organization was the mailing of 2,500 questionnaires in as many prominent business houses of the city inquiring of them what they had acquired with the air mail and giving them information about it.

Secretary MacCracken Addresses Members Boston Chapter N.A.A.

ASSISTANT SECRETARY of Commerce for Aviation William F. MacCracken, Jr., addressed the Boston Chapter, National Aeronautic Association, at the Boston Chamber of Commerce monthly and outlined the work of the Washington air conference held last December. Speaking of the situation in Massachusetts where there has been, and is, a confusion as to State and Federal jurisdiction in aircraft and pilot registration and maintenance, MacCracken said he felt the Senate should see the Federal government proceeding all the regulations needed and the State governments passing their enactments.

The Flying Generals



Left, photograph of Maj. Gen. James E. Fisher, retired, as Chief of Air Corps, and General Francis, retired, as Chief of Air Corps. Both officers served in the Army as colonels, General Fisher in 1918 and General Francis in 1919.

Accounting in Aircraft Operations

Some General Information on a Subject that Effects Air Line Operation

By ARCHIBALD BLACK,
Air Transport Engineer,
and PHILIP H. CAINE,
Business Counselor

AIR TRANSPORT is, as should be known, a business. And as a business it becomes subject to the principles governing successful operation of any business, plus the additional knowledge of problems peculiar to aviation and to any form of transportation. One of the first essentials is accurate knowledge of costs and the planning of a really useful and practical accounting system requires most careful consideration. Obviously, it would be wasteful time to waste any available machine work or to install a system which is out of balance with a modest scale of activity. On the other hand, the failure of air transport is very promising and the development appears to indicate that the system adopted must be elastic in providing for expansion and the furnishing of more detailed information on the costs as the future.

Adapt System to Meet Requirements

The accounting system can be taken hardly from some other field and applied to air transport operation without being adapted to the special needs of this industry. Hence it becomes necessary to adapt a system to meet the requirements. Working alone, however, the accountant experienced in other fields finds himself very much at sea when he enters a field as new and technical as that of air transport. Accordingly, the planning systems for air transport operations must recognize not merely the desirability of avoiding mistakes on each route but the future outlook also. For that reason close cooperation between the air transport engineer and the accountant becomes very necessary. One of the authors of this article has been engaged in aviation engineering for the past 17 years. For the past several years he has devoted all of his attention to air transport and was the first engineer to make a comprehensive study of aircraft operating costs in the United States. The second of the two authors has been engaged in accounting by various fields, including rail and motor transport, and during recent years has been identified with some of the substantial operators of scheduled airlines. Hence it seemed only logical for these to collaborate in the development of a practical system in this new field—one requiring the engineering knowledge and experience while the other furnished the experience of years of accounting in other fields as well as some in air transport.

With the development of air transport in the future to a condition comparable with other means of transportation, it will undoubtedly come under the control of a government body with some authority to regulate and prevent unfair competition. Standardization of the accounting system of an early stage in the development will eliminate the necessity

of an improvement and expense change some time in future. It would therefore seem advisable for the air transport industry to develop as soon as possible a system that adapts to the peculiar needs rather than wait until a government body is forced to order the adoption of a standard one which may not be suited to the liking of the operators. This is a possibility which has no doubt occurred to many in the business already.

The cost accounting system usually has a double service to render and hence should provide: (1) segregated costs permitting determination of the actual cost of maintaining any type of service up to far as this is possible; (2) information which can be utilized in planning reduction of costs. Usually as other purpose exists. The system planned, then, should not only be sufficiently flexible to give the desired information for these two purposes but it should also give, in a system so elastic that it furnishes information in two great detail, thereby making entire cleared work and is almost as desirable as a system so planned that it gives the desired

TABLE 1—Relative Importance of Expenditures in Air Transport Operations Before Distribution

	Per Cent of Total
Pilot's pay and mileage	11.80
Traffic department salaries	9.21
Administrative salaries	8.55
Mechanic's pay, etc.	8.22
General form salaries, etc.	6.80
Gasoline, oil & grease	5.58
Fuel used	5.25
Traveling expenses	5.25
Depreciation of engines	3.82
Overhaul and depreciation of airplanes	3.79
Advertising, direct and work, publicity, etc.	3.77
Insurance	3.63
Scheduled airplane overheads (not net)	3.63
Office rent	2.30
Included engine overheads (not net necessary)	2.03
Administrative not covered by insurance	2.02
Telephone and telegraph	1.82
Claims and legal expenses (arbitrary allowance)	1.75
Depreciation other than airplanes and engines	1.47
Fuel maintenance	1.14
All other expenditures	9.97

Total 100.00 per cent

CAPTION: It must be noted that the relative importance of costs is affected in operating conditions.

TABLE 2—AIR TRANSPORT COST ACCOUNTING SYSTEM

Capital Charges	Average & Terminals	Transportation or operation	Variable costs (such as fuel)	Special operations	Traffic & new business costs	General & Administration
Depreciation (such as)	Terminals (such as)	Direct & indirect costs	Airplane maintenance	Engine maintenance	Rent & direct tax	Rent
Rent & direct taxes	Rent & direct taxes	Direct overhead	Engine maintenance	Depreciation on such conditions	Direct overhead	Offices & direction salaries, fees & meeting expenses
Direct overhead	Direct overhead	Airplane depreciation & obsolescence	Other engine expenses	Other engine expenses	Advertising & publicity	General manager and accounts
Intermediate field maintenance	Field, etc., maintenance	Other yearly depreciation & obsolescence	Engine hourly depreciation	Engine hourly depreciation	Salaries & maintenance	Accounting & clerical
Depreciation & obsolescence	Field lighting	Pilot's lease pay	Gasoline, oil & grease for airplanes	Major transport	Telephone, mail & telegraph	Legal & claim adjustment
Telephone, mail & telegraph	Building	Service maintenance	Flying equipment maintenance	Pilot's mileage	Office maintenance	Engineering
Traffic, sales & trucks	Depreciation & obsolescence	Flying equipment maintenance	Pilot's mileage	Travel expenses	Contingencies & miscellaneous	Telephone, mail & telegraph
Insurance	Office supplies, telephone, mail & telegraph	Other insurance	Travel expenses	Travel expenses	Contingencies & miscellaneous	Miscellaneous office expense
Contingencies & miscellaneous	Insurance	Contingencies & miscellaneous	Travel expenses	Travel expenses	Contingencies & miscellaneous	Travel expense
			Travel expenses	Travel expenses	Contingencies & miscellaneous	Contingencies & miscellaneous

use of costs in a manner which makes them of no practical value to the traffic department in fixing rates or in the management of reducing costs. If the total of some items is of secondary importance or it is difficult to classify, it may be more convenient to be without certain information.

Finally, then, we should start by considering the varied types of service rendered by an air transport company in which the system developed will furnish information in the form in which it can be applied to such service. While every operating company will have certain special conditions, the services rendered will usually be included within the following list:

1. Carriage of mail.
2. Transport of passengers.
3. Transport of freight packages.
4. Special delivery flights.
5. Contracts under which airplanes are tied up ready for use immediately upon demand.
6. The actual flying under airplane "in-op" contracts and which may be charged separately.
7. Night service or "day-night" flights.
8. License to use of company facilities by others.
9. Other special services.

Certainly the system should be so designed that it will support the revenue from, and the cost of rendering, each of these services in order that there may be fixed upon a basis which has not been of open government.

The writer of accounting for revenue is relatively simple, it being only necessary to properly identify receipts. How-

ever, costs must be ascertained to ensure that receipts are actually paid and properly separated and the block forms provided for use of the field and offices should be designed in advance operation of entries. Where such forms are not used and several copies of traffic are handled, the field forms will often be utilized to group entries in a manner that permits their absorption in the accounting department.

In planning the suggestion of costs it is absolutely essential that the accountant have some knowledge of adding air transport costs and costs of enterprises similar to this one on which he is engaged. Study of the actual costs of a typical air transport operating company in the United States shows the major items of the costs to be as given in Table 1. This cost is a characteristic one and in order to achieve an adequate operation the costs must usually (but not always) range in importance in about the order listed. It seems well to mention that the actual operating conditions may greatly affect the relative importance of items in some cases.

The items of expense listed in Table 1, are necessarily spread over different divisions of the company's activities and must be properly distributed if the cost system is to be an adequate adequate information. Generally, expenditures will fall into the following major groups:

1. General and administrative expense.
 2. Business extension and traffic costs.
 3. Average and terminals.
 4. Transportation or operation.
 5. Maintenance of equipment.
- These divisions usually correspond quite closely to the

groupings of the organization and it is then desirable to follow them in development of the accounting system, as then persons each division tend to determine and control the cost of his department. At the same time, individualization must be given to the relative importance of individual items in the costs, as listed in Table 1, so that accounts are not created for items which are of minor importance. These divisions, then, may be considered as the general grouping of accounts.

To determine the expenditures properly attributable to each division it becomes necessary to split up some items of expense for distribution among the various groups to correspond to the physical organization of the company's activities. Following these lines and considering the relative importance of items in the average air transport enterprise, we are enabled to compile Table 2, which may be considered applicable to most operations. However, slight modifications will be necessary to meet the special requirements peculiar to each company's activity.

No Means of Determining Unit Costs

The foregoing outlines the general features of the accounting system in which no effort has been made to go further than determining total costs for each department and for the entire company. In very small operations involving only one, or perhaps two, airplanes and only one kind of traffic this may be sufficient. However, it provides no means of accurately determining unit costs which give direct comparison of different airplanes, engines, etc. As soon as the scale of operations develops information of this last-mentioned type becomes extremely important for the purpose of furnishing comparative data on units of equipment and other similar information. The larger and the more varied the company's activities and equipment, the more important this type of information becomes.

Proceeding, hence, to meet the further requirement of information on unit costs, in Chart 1 is given the general outline of the cost accounting system for determination of unit costs. By the development of such a system as shown in

that Chart, records are built up which give the true cost of operating the various units of equipment. Comparative data of this kind becomes necessary in order to determine the economy of the equipment used and personnel, thus pointing the way towards reduction and standardization of operating costs. Actual and extensive experience in every form of transportation has demonstrated the need of information of this type. Taking as an example the field of motor bus or truck operation, it might be added that some very detailed and elaborate methods of cost analysis are there used and have been found to be fully justified by the results obtained. Hence, in the case of air transport operations, given the need for such action on such costs will be found to prove more pressing.

Pan-American Airways' Planes Operating on Exact Schedule

THE PAN-AMERICAN Airways Corporation planes are flying their Key West-Europe route on exact schedule. Their planes are registered in and cleared by the Post as shippers in the same manner that steamships are handled.

The Pan-American Airways has reentered the Cuban post authorities in an air mail service between several important cities, and Postmaster General for America is making a last effort, and Postmaster General for America is making a last effort, to study the plan. The survey will include the status of Santiago, Antilla, Havana and Havana.

Tidewater Oil Representative Uses Stinson Plane for Travel

W. H. CHAMBERLIN, Chicago regional representative of the Tidewater Oil Company, has received a Stinson airplane, for use in covering the 30 states of his district. The plane is the same in which Eddie Stinson recently completed a 37,000 mile tour of the United States and is equipped with a Wright Whirlwind engine.

Atlanta Chapter N.A.A. Meets And Elects Officers for Year

A-LEASTING ATLANTA with Conder Field, through a letter to the airport, and the marking of all the points on the Atlanta-New York air route will be the program of the Atlanta Chapter of the National Aeronautics Association for the first part of this year, newly elected officers announced at a recent meeting.

Officers elected were as follows: John K. Orley, Jr., president; N. Hunter Maddox, vice-president; Ray Harwell, secretary; and Louis Edgar E. Green, treasurer. Special trips to the field are to be arranged for Atlanta business men, and school children to show development under way.

The directors elected are, in addition to the officers, Henderson Halliday, governor for Georgia of the N.A.A.; Col. Earl P. Vance, Jr., A. Wilson-Levenson, Major John S. Cohen, Clark Harwell, Sr., Professor C. E. Coady, Professor E. K. Lorge, Milton Duggan, Jr., W. B. Harwell, Douglas D. Davis, E. G. Edwards, Rex Paulsen, Foster Harris, Herbert S. Kennedy, W. A. Russell and G. C. Bowden.

Purchases Eaglerock for Use In Sales Promotion Campaign

CAPT. BILL RIPLE, popular California pilot, has purchased an Eaglerock through Jas. L. Mayberry, distributor in that state.

Captain Ripley, formerly northern California branch distributor, is now Pacific coast sales manager for the GIBB, his sales and will use his new Eaglerock in sales promotion.

Chicago, Oakland, and Atlanta Fields Buy B.B.T. Floodlights

W. R. HUNTERMAN, general manager of the B.B.T. Corporation of America, manufacturer of airport lighting equipment, has announced the sale of two B.B.T. air field type landing floodlights. Three have been sold to the Chicago Municipal Airport, two of which are already in operation. The third is being installed.

Another is en route to the Oakland, Calif., Municipal Airport and the fifth is being installed at Conder Field, Atlanta, Ga.

The B.B.T. Corporation also announced the sale of a landing beacon, one of the largest of its kind in the world, to the St. Paul Municipal Airport. The beacon has a range of 360 degrees, is of the type known as H.E., and uses two light sources not too long.

Consolidated Aircraft Building Planes for Canadian Government

THREE CONSOLIDATED Canbair are being made by the Consolidated Aircraft Corporation for the Canadian Government. The work, begun in November, will be completed about the first of February. Plans from the Canadian Army will fly the planes to Ottawa at that time. They are of a higher performance than the P-23 and will be used by the Canadian National Guard.

The Consolidated Aircraft Corporation is also working upon four training planes for the Cuban Government. These machines have been under construction since November, and, upon final reductions will be completed soon.

Purpose of Record

Collection of primary data for posting of Class B forms

To furnish comparative cost data for guiding policy in future purchase of equipment and future plans.

To furnish data for comparative costs of routes and to permit fixing of adequate rates.

To furnish comparative information on pilots' records so that management may be governed thereby.

Chart 1. Outline of procedure for air transport accounting to determine unit costs. Continuation plan must be modified to suit each individual condition.

Title of Form and Purpose of Information

Class Record

Individual charges are per list to Table 1, essential forms being used only where such are necessary for proper completion.



Primary.
Class A.
Continuation.

Class B.
Continuation.

Periodic.
Weekly, monthly, or yearly.

Periodic.
Weekly, monthly, or yearly.

Honor to Whom Honor is Due



Army Air Corps officers who made up America's "Good Will Flight" in Pan-American aircraft received the Distinguished Flying Crosses for which they were cited by President Coolidge on their return last May. The presentation was made by Secretary of War Dwight Davis, at a luncheon given in honor of the flight by Secretary of War in charge of Army Aviation, P. Parker Division. The luncheon was attended by high government and Army officials and diplomatic representatives of foreign countries. Photo shows Secretary of War Davis presenting medal to Maj. Herbert Ripley, flight commander. Other guests were Capt. Ripley and Army officials including Major General Parker, chief of Air Corps, Major General P. Parker, and Assistant Secretary Division are in the front row.

Huff Airplanes, Inc., to Build New Factory and Increase Equipment

THE INSTANTLY famed Huff Airplanes, Inc., is now located on a site adjacent to the proposed Perth Amboy, N. J., Field Airport. The company's property covers approximately 14 acres with 300 ft. of water front on the Raritan River. This location offers an excellent protected anchorage in deep water, free from draftsmen. At the present time the company has three buildings totaling approximately 30,000 sq. ft. of floor space though this will be increased to 45,000 sq. ft. very shortly. It is one of these three buildings that production will be carried on during the construction of the main plant. The main factory will have a total floor space of approximately 54,000 sq. ft. It will consist of a main shop with a 30 ft. balcony suspended from the center bay and on which will be carried a stock room, drafting room and control shop. In addition there are three other buildings which will house a power plant, engineering department, and office.

To Have Up to Date Equipment

It is planned that the shops will be equipped with the most up to date equipment for the production of airplanes. A heat treating plant with automatic control for the hardening of steels, will be installed in addition to new furnaces for the heat treatment of steel, etc. The machine shop will be equipped with steel benches and all machines will be equipped with individual drives. The tooling shop is which all the tooling necessary will be fabricated, will be equipped with a number of special routing tools of both the square and pressure type. There will also be a large lathe, table and tube cutting machine.

A large sheet metal shop will be installed in which there will be a number of special machines for the making and setting of fuselage structures. This will also include the usual sheet metal equipment of brakes, hoppers, trip hammers, buffers, rollers, etc. There will also be welding apparatus for aluminum tank work and tanks for the testing of such assemblies.

Organized Under Laws of New Jersey

Huff Airplanes, Inc., is organized under the laws of New Jersey for the manufacture and sale of military and commercial airplanes. It is planned that the structure of the airplane to be produced will be entirely of duralumin. Two series of planes will be manufactured. The first will consist of single engined planes open and closed models for training and light service work including landplanes and seaplanes with amphibian gear. The second series will include a multi-engine twin tail transport make type with amphibian gear for landing on the ground or water. It is stated by the company's officials that the plan and time necessary for the construction of the main plant under which the company will be located have already been constructed.

The management of the company is in the hands of a board of directors, headed by Senator Morgan F. Larson. Thomas H. Huff, president of the corporation, has been previously connected with aviation since 1929, as one of the first structures in cooperation at the Massachusetts Institute of Technology. During the war he was chief engineer for the Standard Aero Corp. of Plainfield and Elizabeth, N. J. Mr. Huff, in cooperation with the Post Office Department, designed and built one of the first air mail planes ever produced for the Department. These planes were used on the first U. S. Air Mail Route inaugurated Aug. 8, 1918, between New York and Washington. After the war Mr. Huff spent

Great stuff!!
Griffin

FLIGHT IS MADE TO MEXICO CITY

Cameraman Completes Hazardous Trip in Single Motored Eaglet

Grand Rapids, Mich., Dec. 23.—While the powerful, three-engine, Ford plane carrying Mrs. Evangeline L. Knapp was enroute from Grand Rapids, O. O. Griffin, a police cameraman, made the same hazardous trip alone in a single motored plane which he had flown from New Orleans.

Griffin arrived at Veracruz, Mex. Thursday at 4 p. m. after stopping at Birmingham and Thunder, Tex. He reported, unaccountable here because last winter was only of a hurricane, did not become known until today.

When the news was flashed Griffin already had slipped out for San Antonio by way of Thunder, hoping to be caught back in the United States before.

Griffin stayed in Mexico City only 23 hours. The plane he used was an Eagle Hawk.

17-Year-Old Player Wins

This Eaglet was sold at the usual price Cash \$2475. Denver

ASSOCIATED WITH ALEXANDER INDUSTRIES
Room 401, Alexander Building Bldg., Denver, Colo.

Ask us about anything connected with flying

Buy from us anything from a map to a plane

Headquarters for anything aeronautical



Through our unique relationship to the aircraft industry we are offering a most complete service to the passenger or pilot, builder or buyer.

AIR ASSOCIATES, INC., 535 FIFTH AVE., NEW YORK

a year at the Naval Aircraft Factory at Philadelphia, Pa., and in 1923 organized his own company at Hottel-Deland, Inc. This company grew to be one of the largest of the accepted armors of aircraft by the Army and Navy. This company, now the Keystone Aircraft Corp., is still manufacturing a large number of military and commercial airplanes produced in the country. While carrying on production at Hottel-Deland, Inc., the Hottel-Deland Dancers, Inc., was organized and is still very actively engaged in active dancing.

Vice-president of the company is Frank Dorey, Mayor of Perth Amboy, head of Dorey Motors, vice president of Dorey Coal Co., and vice-president of the Perth Amboy Trust Co. The treasurer of the company is I. B. Cress, head of the Cress Lumber Company and a successful builder of many years experience. F. H. Gray, the works manager, was formerly associated with the Hottel-Deland Co., where he has through experience as work manager, purchasing agent, plant engineer, and sales engineer. More recently he has been vice-president in charge of production for the American Locomotive Co. In the engineering and designing department, Mr. Hottel is ably assisted by Austin Bonday who served the Imperial Japanese Government as a pilot during the war and later came to this country as an engineer with the Dayton-Wright Co. and Hottel-Deland Co.

Mail and Express Line Between Halifax and N. Y. C. Contemplated

It is reported by the Department of Commerce that an air-line between Halifax, New York City for the carrying of freight, express and mail, is being contemplated by Halifax business interests.

It is also the intention of the Post Office Department and Department of National Defense to cooperate in experiments on carrying mail by air from Halifax to Montreal and Ottawa during the coming winter season. If these experiments prove successful it is then possible that the service will be established between the two main ports of St. John and Halifax, and make to be in contact.

Nicholas-Beazley Airplane Co. To Distribute Skullly Helmes

EXCLUSIVE DISTRIBUTION for all parts in America, east of Denver for Skullly Air Mail Helmes has been obtained by the Nicholas-Beazley Airplane Co., of Montreal, Minnesota, according to a statement by the officials of the company. The Helmes are made in the only factory made of imported glass bottles and is considered by many pilots to be the most comfortable and longest wearing helmet produced in the world.

Aeronautical Pursuits Corp. Now Agents for Heath Parashut

THE LOCAL agency for the Heath Parashut company has been obtained by the Aeronautical Pursuits Corporation, of Portland, Ore., distributors of Travel Air planes. The first of the Heath planes arrived there a short time ago and has been assembled for use of the aeronautical school of the Hill Military Academy.

Edo Pontoons and the Eaglerock

A beautiful, trim ship this is, the first wing Eaglerock on the "De Luxe" Edos. Beautiful, seaworthy, and pleasing to look at. And comfortable, too. A practical ship in every respect.

Skiff dash it over allows you to pull it close to the beach. The passengers can step right on the deck and make drink of the sea. You can enjoy the lullaby and they are on the water level of the ship. From where they get out the water up-locked, they shoot as they go getting in a moment.

Over coaches and used from insurance



well, the passengers will like riding in this ship. Good for the pilot, too.

A seaplane that handles in the air as well as in the water. Easy to use on water as any seaplane and is very small. Here we get off with full load in any weather. But dash and you have gone plenty of miles. For handling another, picking up moving heavy or working around the water. The steps on front stroke allow the pilot to get forward to engine or propeller quickly and conveniently. Two

steps are spaced apart just right, and front steering tube is in just right place to give you steady and secure position when turning over propeller.

Yes, this is a real practical seaplane.



EDO AIRCRAFT CORPORATION
COLUMBIA POINT, L. I., N. Y.

STANDARDIZED ALL METAL SEAPLANE FLOATS

Incorporation Articles Issued To the Northern Airways, Inc.

INCORPORATION ARTICLES have been issued by the state to a second Waupun, Wis., concern to deal in airplanes. The new company is known as the Northern Airways, Inc., and the incorporators are John F. Wood, Harry W. Lidsky and W. E. Turner. The concern has been chartered to "buy, sell and deal in aircraft of all kinds and to operate air lines" with 100 shares of stock without par value. Officers for the new company are to be elected shortly when the Waupun stockholders of the corporation hold the first meeting.

Paid to conduct a passenger business to points all over the United States are a part of the program outlined by the company, which will use the Alexander Airport as its main base and will operate from that point together with the Hall Airport Corporation.

Northern Airways, Inc., has the agency for the Waupun place for the Waupun and Minnesota territory and it is planned to stock a number of planes there this spring for the trade.

Eaglerock Dealer Uses a Plane For Hunting Wolves in Dakotas

CLARE ICE, chief pilot of the Rapid Air Line (Eaglerock dealer for South and North Dakota), together with his friend Charles Grogg are among their planes in several expeditions.

These men are hunting wolves from the air. They lead their dogs and by the strident voice the predatory animals are plentiful and as the wolves run out to the open over the snow, they are met by a volley of bullets from above.

The old Grogg circle over their quarry in small groups and shoot the wolves at close range, generally averaging two per trip. They usually choose a house from the nation, whose sheep they help to protect, in addition to the wolf-infested herds.

Two Aircraft Companies Granted Charters to Operate by Bureau

THE OWENS Aircraft Corporation, of Philadelphia, and the McCarroll Airplane and Advertising Company, of Pittsburgh have been granted charters by the Pennsylvania Corporation Bureau. The companies were organized to manufacture, repair and operate planes.

Walter H. Proctor, of Johnstown, Harry B. East and T. H. Fox, of Philadelphia, are the incorporators of the Owens corporation, which has a capital stock of \$100,000. Frederick B. Crawford, of Reading, Penn., and Margaret H. Mason, all of Pittsburgh, are the incorporators of the McCarroll Company. It has a capital stock of \$50,000.

Boston Airport Corp. Expects To Manufacture New Airplane

VICE PRESIDENT EDWARD T. O'Donnell, of the Boston Airport Corporation, has transferred his major energies to the new airplane factory in East Boston. He expects to bring out a new plane this spring. He is working on his first plane and rebuilding the old Harvard Flying Club Travel Air which has been purchased by Dr. Chase, a graduate student of the B.A.C.



Truscon Hangar for the Fairchild Aircraft Manufacturing Corp., Farmingdale, L. I.

AIRPLANE HANGARS

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Australian Company Flies Half Million Miles Without Accident

A HALF million miles flown without accident to passengers or pilots has been completed by Australian Aerial Services, Ltd., Melbourne, Australia. This distance is equivalent to a return flight to the moon, and the company claims the distinction of being the first aerial mail service in the British Empire to fly this number of air miles without an accident.

The company which inaugurated the Australian Aerial Service in June 1934 with a fleet of three mailplanes now can boast almost monthly with service operations ranging from twice to seven per week. During that period 1936 passengers have been carried over wide stages of the company's service. While in the employ of Australian Aerial Services, Ltd., Pilot E. E. Swire has flown approximately 320,000 mi. and Chief Pilot F. B. Briggs 296,000 mi.

The Hill Aeronautical School Will Use New Type of Hangar

CAREY HUNTER, hydrographic engineer employed by the Port of Portland, Ore., has applied for patent on a new design for a hangar. The first of the design is now being built for the Hill Aeronautical School.

A new system of plane storage is followed. Each plane is in a separate compartment, thus cutting down fire hazard. Access is obtained by leading the plane in opposite direction. Such compartment is T-shaped and the compartment divided into each other making an long rectangular building. Each plane can be put into its stall without disturbing any other.

Costs are low, eliminating danger of high buildings on a steep field. Fire hazard can be almost entirely done away with by constructing the building of non-inflammable material.

Change Made in Schedule of the Cincinnati to Chicago Airline

THE BERRY-RIDDLE Co. has announced a change in the schedule of its C.A.M. 24 service Cincinnati-Chicago via Chicago. The northernmost schedule now reads:

For Cincinnati	3:45 P.M. SE
For Indianapolis	4:30 P.M. SE
For Chicago	5:45 P.M. SE

This is a four-hour flight from Cincinnati, a point well in favor of business men of Cincinnati and Indianapolis. The line still makes proper connections with air lines at Chicago, particularly with the transcontinental lines, and serves their day's time between here and the West Coast over Texas line.

American Viking Aeronautical Association Visits Worcester

THE GOOD will squadron of the American Viking Aeronautical Association paid a visit to Worcester, Mass., to tribute to the largest Swedish colony in the East. The line was received by Mayor O'Hara, presented with the key to the city and were guests of honor at a main reception held under the auspices of the Worcester Swedish American Association. The members of the squadron were George Shaw, Ansett, pilot; Lars Theophilus Wesson, co-pilot; George O. Gjerloff, navigator and; Eugene John Fred, radio operator.

Pennsylvania State Commission Tentatively Approves Air Rules

THE STATE Aeronautics Commission of Pennsylvania has given tentative approval to the rules governing pilots and conditions of airplanes. The action was taken when the Commission met recently at the Department of Internal Affairs, Harrisburg. The rules conform generally to Federal regulations. They have not yet been made public.

Daniel Schwartz, assistant chief of the Air Regulations Bureau, Department of Commerce, represented William F. McCracken, assistant secretary of commerce for aeronautics, at the Commission's meeting. He offered the cooperation of the Department to the State Board.

To Secure Greater Efficiency Philadelphia Aero Clubs Merge

THE MERGER of the Young Men's Aero Club, of Wilson Grove, Pa., a suburb of Philadelphia, with the Philadelphia Aero Club was announced recently by Joseph B. Good, president of the Wilson Grove organization, and D. G. Henderson, president of the Philadelphia club.

The merger was undertaken for more economical operation and increased efficiency of the two organizations, both of which were mostly organized for virtually the same purpose. The new club will retain the name of the Philadelphia Aero Club. One of its purposes is to provide aeronautical training for young men of moderate means.

At a meeting of the pilot clubs recently, E. M. Dougherty, secretary of the Philadelphia Aero Club, announced plans for the purchase of a biplane. Russell McDonald, a pilot in

the French air service during the World War, told the club he would aid it in securing a fundable in the community. R. G. Grubb, Indianapolis, told of his experience. Al Christie, sky writer, also spoke.

The merger fits in with the trend of Philadelphia's aviation sentiment, it having recently been announced that the Aero Club of Pennsylvania and the Philadelphia Chapter of the National Aeronautics Association are discussing plans for merger of their organizations because of duplication in membership and aims.

Thirty-five Charter Members Start Flying Club of Boise

THIRTY-FIVE AVIATION enthusiasts, meeting in the Industrial Arts Building, of the Boise Club, Idaho, high school, organized the Flying Club of Boise. The officers were: E. G. Renshaw, president; Harry O. McDougall, vice-president; H. A. Harst, secretary; Cyril C. Thompson, treasurer; and John Custer, Jr., representative. The other members of the board of directors are: Dr. H. C. Durkin, Ivan L. Nelson, Charles Wrightman and A. J. Komer.

All the initial meeting, the instructor in auto mechanics, Charles Phillips, of the Boise High School, outlined how the voluntary educational fund would finance out of instruction, provided enough members of the club were employed in aeronautics, or some allied branch of the industry.

W. C. Olson, a pilot, related some personal experiences he had had in the training of students in aeronautics. John Custer, Jr., spoke of the interest manifested by high school scholars in aviation. The Boy Scout side of the question was presented by L. H. Butler, scoutmaster.

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Foreign Aeronautical News Notes

By Special Arrangement with the Transportation Division,
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Mexico Grants Air Concessions

Concessions for air service from Mexico City to Brownsville, Tex., and Mexico City to the Guatemalan frontier have been granted by the Mexican Department of Communications and Public Works. The Mexico City-Brownsville service will be via Tampico. The Mexico-Pan-American Airways, S. A., of Mexico City, has the concession for a service between Mexico City and a point on the Guatemalan border and its route is expected to be via Puebla, Toluca, Oaxaca, San Juanito, Tuxtla Gutierrez, San Cristobal and Comitan. Mexico-Away landing fields will be used.

May Use Planes in Mexico Pilgrimage

There is an opportunity for American airplane makers to charter several planes for the use of pilgrims from Mexico to Jerusalem during 1928.

A dozen airplanes capable of carrying 20 passengers each to transport pilgrims to Mecca and to Jerusalem are wanted by the Holyland Pilgrimage Transport Agency of India, whose managing proprietor has written the Department of Commerce expressing his desire to charter that number of planes for use in April, May and June of this year.

Answering the proprietor's letter, the lack of railroad

transportation and good automobile roads in India would make the air service very welcome. The same transportation, he says, is very difficult from Mecca to Madras and to Jerusalem. The proposed service would carry pilgrims to Mecca from Jeddah, from Mecca to Madras, and from Madras to Jerusalem.

Club Formed in Delhi, India

A light airplane club will be formed in Delhi, India, at the near future. It is reported that it has been agreed that when equipped the club should be federated with the Aero Club of India and with other light airplane clubs in India.

It is proposed that the club will provide facilities for flying and for granting flying certificates to its duly qualified members. According to the journal, the Government is expected to make a liberal grant to the club to start with, in addition to two light airplanes, spare engines and hangars. The grounds adjoining the Overseas Club at Kirti Nagar (Old Delhi) and the adjoining Old Fort outside Delhi State has been suggested as an airport, but until the creation of a full fledged airport it is suggested that the Royal Air Force aerodrome in New Cantonment may be placed at the disposal of the club.

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PUBLISHER'S NEWS LETTER

The extent of the influence of what may be called the Lindbergh episode has not as yet been fully explored. There have been sales of textbooks in almost every language of the civilized world entailing all of the same general theme. Whether the eager pilot saved opportunity when the flood tide was flowing or fought his way against a swift current matters little. The public will look back on the flight of Lindbergh as marking a new era of aeronautical development. But what is to be his influence on his chosen profession? The way be examined by everyone engaged in aeronautical work with some personal benefit.

To the world at large, Lindbergh has been an inspiring example of clean and courageous young manhood. To the abilities of every country he has typified all the finer things that boys should aspire to. To the disbelievers he has been a gift from the sky whom test and actual simplicity have explored the imagination of all who have seen him or read about his exploits. To politicians of all grades he has been useful as it has given them a much desired opportunity to exhibit their emotional powers and back at the smugness of those of events that follow him wherever he goes. Civic organizations have rejoiced the experience of him working, always so important to their existence. The newspapers, picture agencies, publishers, telegraph companies and air mail have all had their incomes increased in unbelievable extent by the continuing interest in Lindbergh's efforts to advance aviation. The aircraft industry has received a startling impetus from the confidence that he has created in flying. But little has been written about the effect of his example on his associates in flying.

To pilots, Colonel Lindbergh is his personal associate has been and always will be just "Doc," the bombardier who passed through the jungle stage, aerial service experience and finally air mail piloting, emerging from obscurity through his ability to gain the confidence of others. This is the way Lindbergh explained himself to his bank. But above his flying achievements there is another and much more important and very definite distinction. Obviously, it is his personality. And the impression he has given the world of the American pilot is the point at which his remarkable performance affects every member of his profession. It is not too much to class him as the exemplar of a new creed of conduct.

Before Lindbergh established a standard from which the public reared its opinion of American pilots, what was the generally accepted idea of the average aviator? He was, of course, a fine specimen of physical development. His courage around the dare devil line. He had many picturesque qualities not the least of which were his clothes. But with all the admiration for these characteristics, the unadmitted there was something lacking. His very calling, at least to the public, a carelessness about time and a recklessness that gave indication of a complete disregard of future events. Personal contact with some created a feeling about individual pilots difficult to understand. Flattering, and in many cases highly exaggerated, stories of war exploits increased the opinion of uncertainty of pilots' stability. But the public failed to grasp the fact that they were tales of the fighting pilot and not the peace time aviator. And this came Lindbergh.

Gradually, as his material flying skill became an accepted fact, his reverence, test and character all seemed to have an almost range in the public mind. As time has passed, the opinion in different surroundings of the simplicity of his behavior has established a standard of conduct that is certain to have a strong influence on all aviators. They have noted the world wide acclaim which has followed him. His has not been just curious notoriety that has so often been mistaken for fame but homage to an innocent form. He has placed his reputation of the first on a lofty pedestal. Not the least of the effects of his unassuming conduct will be an elevating influence on that whole flying profession. Any pilot of the future will feel that braids, bandoliers and ruffles do not win. Instead the pilot's personality as well as his achievements will come under the scrutiny of cooperation. If they ever approximate some of Lindbergh's accomplishments their shortcomings will be overlooked. Other pilots will show the skill, determination and bravery of the pioneer pilot of 1927. But their conduct will be gauged by the reserve and the poise which have been the outstanding elements of Lindbergh's behavior. They afford every reason a pattern. The level of spiritual existence has been raised to include fastness of character. Every American pilot has a new standard to live up to and the aeronautical world will be immeasurably better for the coming of "the perfect aviator."

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Dept. A Lincoln, Nebraska

postmaster as Army cadet at Fort Snedden Field, Vaux air field, recently, were discussed, and, according to Lane (Ed. G. Kelly, who supervised the field).

St. Louis, Mo.

By Oliver S. Adams

To D. E. Smith, manager of Lambert-St. Louis Field, and he given credit as a pilot-diplomat, and possibly one of the first of a coming profession with which the Smiths are the representative of the major of St. Louis at a conference of some size, St. Louis, during the middle of April, he, the being in connection with the opening of Chicago's new municipal airport. During his stay Mr. Smith pilot's 10 minutes over Chicago on a light-sounding tour of that city. He did it in a Ford two-engine monoplane, owned by the brand and Oil Co. What impressed him was Chicago's approach to aviation in the future the center of international aviation in this country.

Ryan Brougham at Candler Field



Ryan Brougham and the new Ryan Brougham he is operating at Candler Field, Atlanta, Ga.

Waterlootown, N. Y.

By Edwin J. Fuchsberg

Everything now points to the probability of the establishment of a municipal airport here next spring. Although the location of such a field has not been definitely decided upon it is expected that the city will either purchase or lease the field now being operated by Frederick H. Taylor, which is about one mile north of the city on the main highway to the Thousand Islands.

Alger Graham has recently been named by the State Aircraft Corporation as pilot for Frederick H. Taylor who owns a Stinson-Detroler and who also has the agency for that plane in northern New York. Mr. Graham has had a lot of experience in winter flying having flown with Captain W. D. Lee in the Arctic regions for seven months.

Mr. Taylor has completed his temporary hangar, replaced the wheels of his plane with skis and is now prepared to operate his plane for the rest of the winter without repair to the weather.

Waterlootown is the gateway to the Thousand Islands, it is expected that during the coming year the airport will be visited by many flying to that popular summer resort.

Syracuse, N. Y.

By John S. Fenderson

1. Lt. Lane Stetfield, commanding the emergency reserve at the airport, and Lt. Lane Stetfield, of the Buffalo Post, landed at the municipal airport here recently as guests of the New York City. They continued the flight on the following day with the temperature far below zero.

2. Lieutenant Stetfield was piloting a Douglas Army aircraft equipped with a Liberty engine.

3. Lt. E. B. Culbertson and Lt. C. B. Overacker, of the 1st Field, landed at the Syracuse field in two new P-1s, one newly built from the Curtiss factory at Buffalo. They were en route to their home port. Lieutenant Culbertson received with a recent from the management of radio broadcast station WWTB that he say a few words about aviation. He complimented Syracuse on its airport and predicted a great future for aviation in this city.

Ogden, Utah

Ogden Airport's first barge, owned by the Air Service and Navy of Salt Lake, has a span of 70 ft. It will house five planes. A laundry with lockers and showers is being added as well as a club room and a mess hall.

Already the flying school of the company has enrolled 10 students, six of them, Albert Underwood, Floyd Rice, Ralph Smith, Tom Marks, Ned D. Stewart and Ray L. Dinsley, all well-known Ogden youths, in 80 days, he ready to take their Department of Commerce examination.

During the cold weather the students are demanding and recommending a Lincoln Standard.

The Air Service will not only conduct a school, but also a tax service unit, using a Fairchild aerial camera and probably a Fairchild monoplane, will do all kinds of aerial photography.

Salt Lake City, Utah

By Robert Dickinson

An mail route to the extent of 2,000,000, is now being established in Salt Lake, and out, for the year 1935. The post office at the airport has handled since Jan. 1, 1935, an average of 1,000 lb. of air mail daily.

The increase of Commerce air mail required the first double-header flight of the Western Air Express from Los Angeles, recently, the two planes arriving here carrying 600 lb. of mail and one passenger. If this increase continues, the Western Air Transport will be forced to inaugurate double-header flights to the eastward. A survey shows that the following cities: San Francisco, Los Angeles, Portland, Seattle, Tacoma, Spokane and Salt Lake, are the principal air mail production centers.

Next, G. V. Haines, piloting a Douglas training plane from Dayton, stopped over at Salt Lake en route to Spokane where it will be used by the Washington National Guard in training work.

Next, Edward L. Mangler, in charge of the local Army Air Corps division, is flying another Douglas training plane from the factory in Salt Lake, where it will be stationed permanently at the airport.

A federal inspector and authority on airports is on route to Ogden, according to W. W. Kane, chairman of the Committee of Commerce Committee on Aviation, who appeared before the city commissioners recently to request an appropriation for airport purposes.

"A field now in use," he said, "has been condemned by the city due to the possibility of a high tension line, but the airport has four or five other airports which are used and will be used in the future after its arrival."

One is larger of the Air Service and Navy, at the Salt Lake Airport, has a span of 65 ft. which makes it the

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Detroit, Mich.

By John Tobin Merrill

Because of the disappearance of William MacCracken, Jr., assistant secretary of Commerce for Aviation, the City-County Airport Commission voted to reject all other tender offers for the location of a municipal airport and will seek a site close to downtown Detroit.

The committee had been considering six sites, all less than 15 miles from the center of the city. These sites were discussed after the rejection of more than 50 tracts of land in and about Detroit.

Secretary MacCracken came to Detroit at the request of the committee and inspected the proposed sites with them. He urged that the field be located not more than 15 miles from the center of the business district. The City-County Airport Committee is headed by C. H. Ward Murphy, president of the Board of Five Commissioners, and includes William H. Mayhew and C. E. Parker, representing the county and Commissioner Fred W. Gosselin and John Skowronski, representing the city.

Ray Cropper, executive secretary of the Detroit Board of Commerce, accompanied Mr. MacCracken on the inspection tour.



Air Corps Will Keep Reserve Record

In accordance with a form of individual record card being sent out by the War Department to the various stations, the Air Corps has taken steps to have each reserve officer's activities, in so far as they may apply to improving him as a reserve officer, maintained and available as credit to be used.

The form provides for a record of physical examinations, correspondence courses, creative and active training with a complete record of the flying performed during the period of the report, and the types of missions accomplished. Provision is also made for that flying of reserve officers made in civilian aircraft, being noted by their records on the card. The missing in this was being designated as "unfilled."

These reports will be available as permanent records in the activities of the reserve officers to allow the Corps to keep closer supervision on the value of each reserve officer within its stations. The recordkeeping of data of this nature will also automatically show reserve officers holding up for themselves records on which they may be entitled to promotion from time to time.

Lands Airship on Building

The first successful landing on a building by a lighter-than-air craft was accomplished recently by Capt. Charles F. (Left) Air Corps, and even as the roof of the Newport News Hotel. As far as is known, this is the first time this feat has been accomplished in the history of aviation, and it is an added step toward proving that it is not accomplished with probability, as had wind schemes a wind speed of eight m.p.h. in considered ideal for landing.

Newspaper photographs were on hand to record the feat as well as news correspondents to broadcast the story of the feat. Landing officers were hastily placed with the top and stated that the success will lead greatly in the development of aviation, proving that the landing and taking off of passengers, freight and mail from a building is entirely possible.

Explosive Clark, who is in charge of lighter-than-air flights at Langley Field, Va., was also assisted by Joseph

E. T. Hawley and J. M. Perkins in handling the airship, and a detachment of 30 men, under Lt. Col. H. Anderson and Master Sgt. H. Chapman, manned the guide ropes as they were dragged from the ship on to the roof.

Fort Tilden, N. Y.

The War Department has approved the project for the construction of an intermediate landing field at Fort Tilden, N. Y., at a cost of approximately \$75,000.

The location of such a field at this point has several advantages. Fort Tilden is on the air route between Hoboken Field, N. J., and Mitchell Field, L. I., and the landing field will serve for safety during the route, as during the attack, and among Mitchell Field is often covered with a dense growth of grass, while Fort Tilden is free from fog. It will greatly facilitate emergency target practice at that station and will also meet aerial spotting for the coast defense guns at Fort Tilden and Howland.

American Depot To Be Sold

Under authority of an Act of Congress, the Quartermaster General of the Army will sell the land and improvements comprising the American Air Intermediate Depot and Bomber Field, Ga.

The land and improvements to be sold are located in Spalding County, approximately four miles northwest of the City of Augusta. The land was leased during the World War, and subsequently purchased for use as an air intermediate depot and a flying field for primary training. It is offered for sale, either as a whole or in two parcels; one consisting of 3043 acres of land and seven buildings of various uses, and the other consisting of 324.85 acres of land, 35 buildings of various uses, 12 hangars 47 by 116 ft., one steel tower

tank, having a capacity of 75,000 gal., one wood water tank having a capacity of 100,000 gal., three gasoline tanks, having 1,000 gal. capacity each, and a septic tank and an incinerator.

Railroad sidings connect this property with the Central Railroad of Georgia, thereby affording convenient railroad facilities, should the property be used for the storing and shipping of farm products. The climatic conditions of Spalding County are especially favorable to agriculture. The usual rainfall, while abundant, is not excessive, and is very well distributed throughout the year. Prolonged dry weather sometimes occurs during the winter months, but very seldom in the summer, so that crops are rarely injured to any great extent by such conditions.

This property was offered for sale in April of this year but all bids were rejected as they were below the appraised value.

Langley Field Represented as Augusta

A flight of 25 planes and one airship recently took off from Langley Field, Va., for Augusta, Ga., to assist in the opening of the municipal airport in that city. The Air Corps Test and School aircraft went in a body, as 25 planes left that organization. These included the O-1 Transport and the BOMBARDIER photo plane were sent from the Second Bombardment Group. All but the O-1s landed at Pope Field for fuel, and on both legs of the journey, not only early, special transportation and snack machines were carried out by the Air Corps Test and School officers.

Arriving at Augusta, the personnel were the guests of the city and were very comfortably taken care of by them. The next day the official debarkation exercises were held, and the Army photo participated in several exhibitions of formation flying, attack maneuvers and pursuit combat, as well as airship maneuvers by the TC-354.

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